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November 17, 1970

Attention: John C.

Dear John:

Enclosed please find three (3) copies of Activity
Summary No. 19, 2201201-AS-19.

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Sincerely,



Senior Staff Scientist

PSC/c

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ATTACHMENT.

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Log# 216a 25X1
Copy No. a of a-d



November 16, 1970

ACTIVITY SUMMARY

To: John C.
From: [redacted]
Subject: Contract Visit to Customer Facility
[redacted]
Dates: 12, 13 November 1970
Reference: [redacted] 2201201-AS-19

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On 12, 13 November 1970 [redacted] visited the [redacted]
[redacted] facility under Contract [redacted] for purposes
specified under the contract. The applications undertaken
during this visit were substantially the following:

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1. Review of the CORN target data obtained from microdensitometer traces at the facility.
2. Review of status of continuous tone imagery being processed at the lab.
3. Operations on the Beck optical processor to evaluate response obtained for low frequency attenuation filters and noise suppression filters (low pass filters).
4. Direction of continuing program for evaluation of operational image manipulation by contrast and high frequency enhancement.

GROUP 1

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NOTICE

THIS MATERIAL CONTAINS INFORMATION AFFECTING THE
NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE
MEANING OF THE ESPIONAGE LAWS, TITLE 18, USC,
SECS. 793 AND 794. TRANSMISSION OR REVELATION
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IS PROHIBITED BY LAW.

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The details of performance are written up in the lab notebooks. Copies of the [] notebook are delivered each month with the technical status report. 25X1

The primary status at this time can be defined as a searching mission under controlled manipulation of spatial frequency variables. Visually, one can see a definite enhancement but there are conditions where noise is also enhanced or dynamic range is lost. These must be avoided and we are working at defining those conditions where best response is obtained. Data from the CORN target supports analytical projections previously described. That data will be delineated and supporting continuous tone image enhancement is now being obtained. A program plan for continuing activity was left with John C. The next trip is planned for 19, 20 November 1970.

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Attachment

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Program Plan

To

From

Subject Program Plan

Image Manipulation

for week of 16 Nov., 1970

Date 13 Nov., 1970

With the optical system set up in a processing arrangement at 1:1 conjugates, and magnification performed with an output magnifier, evaluate continuous tone enhancement capability. For this purpose let us determine affect of filters used on CORN imagery for present continuous tone imagery. Since we must maintain dynamic range the application is more critical and the transition from binary CORN imagery to continuous tone may require a number of evaluating experiments and tests. If, for example, we are limited in resolution through the optical processor then we will have to decrease the front focal length to give higher resolution and

entertainment white processing. There are

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other ways to go and these can be determined if required.

Program

1. Determine density requirements for low frequency attenuation filter by evaluation of photography imaged through processor (continuous tone imagery).
2. Evaluate application of low pass filter as a noise smoothing (reduction) filter. Use photography taken on Nor 13 for preliminary input data. Consideration must be given to the possibility of decreasing processor capability in resolution when the low pass Gaussian is used. We must avoid band limiting system response in the region image information is expected.
3. Utilize a number of formats in the system. Refocus each time new imagery is placed at input plane. Determine response characteristics in attempt to delineate specifications for manipulation response re. continuous tone imagery.
4. Gather final data on CORN target microdensitometer traces to be used

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for evaluation of system response for the tri-bar target input. Data will be reduced and intensity contrast information will be used in comparison of input vs. output value.